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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,383	09/26/2003	Bharat T. Doshi	Doshi 57-6-22-18-34	8402

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EXAMINER	
BATES, KEVIN T	

ART UNIT	PAPER NUMBER
2153	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/673,383	DOSHI ET AL.	
	Examiner	Art Unit	
	Kevin Bates	2155	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 September 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15 and 17* is/are rejected.

7)☐ Claim(s) *16* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *9-24-07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Response to Amendment

This Office Action is in response to a communication made on September 25, 2007.

The Information Disclosure Statement filed September 24, 2007 has been considered.

Claims 1, 7, and 11 have been amended.

Claims 14-17 have been newly added.

Claims 1-17 are pending in this application.

Specification

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). The specification provides no disclosure for how to computer the bitwise AND or compute the OR function of all the elements of the resulting vector to determine whether sharing is possible. The specification also provides no support for the idea that the path cost and sharability of any link are independent of one another.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 7 and 14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claim 7, in the applicant's remarks section filed September 25, 2007, the applicant provides a description of how one would compute the bitwise AND as claimed in claim 7. The examiner found no description or support for this discussion in the specification and one skilled in the art would not be able to determine based on the claims how this is computed. Additionally, the examiner does not believe that computer the bitwise AND on a node-link vector is well known in the art, so there is a lack of written description for this computation in this application. The examiner requires an affidavit from the applicant demonstrating how this is well known in the art in order to overcome this rejection.

Regarding claim 14, the claim includes the added limitation that the path cost and sharability of a link are independent of one another. In the applicant's remakrs filed September 25, 2007, the applicant finds support for this claim at page 23, lines 21-29 and page 26, line 21-23. The examiner, upon reading these selected section was unable to find support for this limitation. In fact, on page 23, lines 21-23, the specification discloses that the path's cost is calculated using the sharing of the path. This implies to the examiner that the path cost of a link is in fact dependent upon the sharing of that link which is also supported by claim 1, which has the limitation that the

path cost is a function of the sharability. Upon search of the rest of the specification, no further evidence was found to support the idea of independence.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim contains the limitation "the form of the sharing degree is an approximation to the sharing degree that is calculated . . . ." It is unclear in the context of the claim how the form of the SD is an approximation of that same SD, please clarify the language to describe what exactly meant by the claim language. The claim also contains the limitation, "computer the bitwise AND of the binary representation of the node-link vector." It is unclear what exactly a bitwise AND is and how it is computed.

Claim 14 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim discloses the limitation that the path cost and sharability of a link are independent of one another. It is not clear from the claim or any information in the specification what it means to have those two factors to be "independent" of one another. This is further confused by the limitation of claim 1, where it requires the path cost to be a function of the sharability of the links.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-11 and 13 rejected under 35 U.S.C. 102(b) as being anticipated by Doshi (6130875).

Regarding claims 1 and 11, Doshi teaches a method for determining primary and restoration paths for a new service in a mesh network having a plurality of nodes interconnected by a plurality of links (Abstract), the method comprising:

for each of a plurality of candidate path pairs for the new service, each candidate path pair comprising a candidate primary path and a candidate restoration path for the new service (Column 23, lines 55 – 64), generating a path cost associated with said each candidate path pair, wherein the path cost for a candidate path pair is a function of sharability of one or more links within the corresponding candidate restoration path (Column 25, lines 30 – 38); and

selecting the primary and restoration paths for the new service from the plurality of candidate path pairs based on the path cost of each candidate path pair (Column 27, lines 26 – 41).

Regarding claim 2, Doshi teaches the invention of claim 1, wherein generating the path cost for each candidate path pair comprises: generating a link cost associated

with each link in the corresponding candidate restoration path (Column 26, lines 8 – 17); and generating the path cost as a function of a sum of the link costs for all links in the candidate restoration path (Column 25, lines 41 – 51).

Regarding claim 3, Doshi teaches the invention of claim 2, wherein, for each link, generating the link cost comprises: determining whether sharing is available on the link; and if sharing is available, then generating the link cost as a function of a sharing degree for the link (Column 25, lines 41 – 51).

Regarding claim 4, Doshi teaches the invention of claim 3, wherein, if sharing is not available (Column 26, lines 8 – 9, if the capacity request is rejected), then: determining whether utilization of the link is greater than a specified threshold; if the link utilization is greater than the specified threshold, then generating the link cost as a function of an administrative weight for the link and available capacity on the link; and if the link utilization is less than the specified threshold, then generating the link cost as a function of the administrative weight for the link (Column 23, under FC header in the table, shows that the FC value is updated even if the commit message is rejected and the threshold is if the FC is greater than zero).

Regarding claim 5, Doshi teaches the invention of claim 3, wherein the link cost is also generated as a function of an administrative weight for the link (Column 35, lines 19 – 24).

Regarding claim 6, Doshi teaches the invention of claim 3, wherein the link cost is also generated as a function of a form of a sharing degree (Column 23, under FC

header in the table, where FC takes into account capacity that has been reserved for restoration path as free capacity is increased).

Regarding claim 7, Doshi teaches the invention of claim 6, wherein the form of the sharing degree is an approximation to the sharing degree that is calculated using a binary representation of a node-link vector and a binary representation of a primary path node-link vector, wherein the calculation of the approximation comprises: computing the bitwise AND of the binary representation of the node-link vector and the binary representation of the primary path node-link vector (Column 25, lines 30 – 38, where the alrigthm that has the highest G value and the G value is calculated taking into consideration all the links along the route, see steps 3 and 4), and computing the OR of all elements of the resulting vector to determine whether sharing is possible (Column 25, lines 43 – 48, where determining if any of the links is zero is the same as taking the OR of all the links in the route).

Regarding claim 8, Doshi teaches the invention of claim 1, wherein the sharability of a link in a candidate restoration path is represented by a sharing degree for the link, wherein the sharing degree is a maximum number of additional unit-bandwidth primary services that can be added to the candidate primary path without increasing restoration bandwidth reserved on the link (Column 23, under FC header in the table, where FC takes into account capacity that has been reserved for restoration path as free capacity is increased).

Regarding claim 9, Doshi teaches the invention of claim 8, wherein the sharing degree SD for a link is given by: SD=the maximum value m for which max

$\{m*V_{pnl}+V_{nla}\}$=RB, wherein: V_{pnl} is a primary path node-link vector for the corresponding candidate primary path; V_{nla} is an aggregate node-link vector for the link; and RB is current reservation bandwidth on the link (Column 25, lines 30 – 38, where the algorithm that has the highest G value and the G value is calculated taking into consideration a weighted version of the primary route and restoration route, see the table in column under G function, steps 3 and 4).

Regarding claim 10, Doshi teaches the invention of claim 8, wherein the sharing degree SD for a link is given by: SD=the maximum value m for which max $\{m*V_{pn}+V_{na}\}$=RB, wherein: V_{pn} is a primary path node vector for the corresponding candidate primary path; V_{na} is a node-aggregate vector for the link; and RB is current reservation bandwidth on the link (Column 25, lines 30 – 38, where the algorithm that has the highest G value and the G value is calculated taking into consideration a weighted version of the primary route and restoration route, see the table in column under G function, steps 3 and 4).

Regarding claim 13, Doshi teaches the invention of claim 11, wherein the network manager is located at a single node of the network (Figure 6, element 54).

Regarding claim 14, Doshi teaches the invention of claim 1, wherein the path cost is independent of the sharability of any link within the corresponding candidate primary path (Column 25, lines 30 – 38).

Regarding claim 15, Doshi teaches the invention of claim 2, wherein the candidate restoration path comprises at least two links (Table in Column 23, under the

G function, this shows that is travels all the links of all the possible routes between the two points in the network, thus ensure each route can have at least two links).

Regarding claim 17, Doshi teaches the invention of claim 7, wherein the binary representation of the node-link vector and the binary respresentation of the primary path node-link vector each have a plurality of entries corresponding to the nodes and links in the network and each entry of each vector identifies whether failure of the corresponding node or link will cause activation of all the bandwidth that was reserved for restoration paths on the link (Column 14, lines 1 – 5).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Doshi.

Regarding claim 12, Doshi teaches the invention of claim 11.

Doshi does not explicitly indicate wherein the network manager is distributed over the network.

Examiner takes Official Notice (see MPEP § 2144.03) that "the central manager in Doshi can be distributed over the network in order to provide redundancy or load balancing in the network". The Applicant is entitled to traverse any/all official notice

taken in this action according to MPEP § 2144.03, namely, "if applicant traverses such an assertion, the examiner should cite a reference in support of his or her position". However, MPEP § 2144.03 further states "See also In re Boon, 439 F.2d 724, 169 USPQ 231 (CCPA 1971) (a challenge to the taking of judicial notice must contain adequate information or argument to create on its face a reasonable doubt regarding the circumstances justifying the judicial notice)." Specifically, In re Boon, 169 USPQ 231, 234 states "as we held in Ahlert, an applicant must be given the opportunity to challenge either the correctness of the fact asserted or the notoriety or repute of the reference cited in support of the assertion. We did not mean to imply by this statement that a bald challenge, with nothing more, would be all that was needed". Further note that 37 CFR § 1.671(c)(3) states "Judicial notice means official notice". Thus, a traversal by the Applicant that is merely "a bald challenge, with nothing more" will be given very little weight.

Allowable Subject Matter

Claim 16 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments filed September 25, 2007 have been fully considered but they are not persuasive.

Regarding claims 1, 3, and 11, the applicant argues that Doshi does not disclose that the path cost does not include the sharability of the links. The examiner disagrees, as stated, the G function discloses in Column 23, teaches determining the capacity available on the links along the route between the nodes. Determining the available capacity indicates how much bandwidth can be provided to a new path along a route, thus teaching the sharability of that bandwidth along that route.

Regarding claim 2, the applicant argues that Doshi does not teach summing the individual link costs of all the links in the candidate restoration path. The examiner disagree,s as seen in the G function in Column 23, part of the algorithm includes calculating the minimum free capacity along the link and divided that summed value by the number of links along the path to create the individual link costs.

Regarding claims 9 and 10, the applicant argues that Doshi does not teach node link vectors and determining the maximum value of m. The examiner disagrees, in Doshi's algorithm, it attempts to find the link that has the highest G value and the G value is calculated taking into consideration a weighted version of the primary route and restoration route, see the table in column under G function, steps 3 and 4. Also in terms of node link vectors, Doshi teaches determining the capacity along each link of each section of the node, using values of the pairs of wavelengths. This is equivalent to the node vectors as claimed in the application.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Bates whose telephone number is (571) 272-3980. The examiner can normally be reached on 9 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glen Burgess can be reached on (571) 272-3949. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

GLENTON B. BURGESS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kevin Bates
October 8, 2007